DAAD
Deutscher Akademischer Austauschdienst
German Academic Exchange Service

22ème Réunion et Conférence de l'Association Africaine des Entomologistes
22nd Meeting and Conference of the African Association of Insect Scientists
الإجتماع والمؤتمر العلمي الثاني والعشرون للجمعية الأفريقية لعلماء الحشرات

Date: 23 – 26 October 2017
Venue: ARC, Wad Medani, Sudan

التاريخ: 23 - 26 أكتوبر 2017
المكان: هيئة البحوث الزراعية، ود مدني، السودان

"Towards securing human welfare through management of insect diversity in a changing world"
"Vers une amélioration du bien-être humain grâce à la gestion de la diversité des insectes dans un monde en mutation"
"نحو تأمين الرفاهية البشرية من خلال إدارة تنوع الحشرات في عالم متغير"

Livre des Résumés
Book of Abstracts
كتاب المستخلصات

بنك امدرمان الوطني
سيد شباب المصارف

icipe
African Insect Science for Food and Health

twas

CABI plantwise

biovision

THE ORTHOPTERISTS SOCIETY

(SAGA)

مجموعة سي تي سي
CTC GROUP

سي تي سي للكيماويات الزراعية
CTC AGROCHEMICALS

شركة نور أغرو سينس للكيماويات المحدودة
NOUR AGRO-SCIENCE FOR CHEMICAL CO. LTD.

Journal of Insects as Food and Feed

البنك الزراعي السوداني

Ethiopian
የኢትዮጵያ

"TOWARDS SECURING HUMAN WELFARE THROUGH MANAGEMENT OF INSECT DIVERSITY IN A CHANGING WORLD"

"VERS UNE AMÉLIORATION DU BIEN-ÊTRE HUMAIN GRÂCE À LA GESTION DE LA DIVERSITÉ DES INSECTES DANS UN MONDE EN MUTATION"

"نحو تأمين الرفاهية البشرية من خلال إدارة تنوع الحشرات في عالم متغير"

Edited by / Edité par :
Bonaventure OMONDI AMAN, Sévilor KEKEUNOU, Mauricette OUALI-N'GORAN, Faiza Elgaili Elhassan SALAH, Chrysantus TANGA MBI, Emana GETU, Elisabeth ZANOU and Pascal AYELO.
Design and layout by / Conception et mise en page par: Saliou Niassy

revealed that Mazoferm attracted significantly highest numbers of *B. zonata* than Torula yeast and GF-120 with 18, 8 and 1.9 fruit fly/trap/day (FTD) respectively in the first site while similar attraction levels were reported to Mazoferm and Torula yeast in the second site with 1.1 and 1.2 FTD respectively. Spray of Mazoferm in combination with spinosad significantly reduced population of *B. zonata* (FTD) as well as suppressed the infestation level of guava fruits by *B. zonata* (fruit flies/Kg of fruits). These food based attractants, could be developed into an effective monitoring and control tool for this species.

Key words:

ST-6.08. Effet Comparatif de Deux Insecticides Incorporés au Méthyl Eugénol sur les Mâles de *Bactrocera dorsalis* en Conditions de Laboratoire

Nébié K[1], Dabiré A R[1], Kaboré K[1], Semdé R[1], Tiendrébéogo A R[1], Nacro S[3]

[1]Institut de l'Environnement et de Recherches Agricoles (INERA), Direction Régionale de Recherches Environnementales et Agricoles de l'Ouest (DRREAO), Station de Farako-Bâ, Bobo-Dioulasso, 01 BP 910, Bobo-Dioulasso 01, Burkina Faso.

[3]Institut de l'Environnement et de Recherches Agricoles (INERA), Centre Régional de Formation et de Recherches Environnementales et Agricoles de Kamboinsé, 01 BP 476 Ouagadougou 01, Burkina Faso.

Résumé

La mouche des fruits *Bactrocera dorsalis* est une contrainte majeure à la production et à l'exportation de la mangue au Burkina Faso. Des formulations à base de méthyl eugénol sont utilisées pour le piégeage de masse des mâles de *B. dorsalis* et d'autres espèces du même genre. La présente étude a eu pour objectif d'évaluer l'effet de deux formulations sur les mâles de *B. dorsalis*. Il s'est agit du méthyl eugénol+malathion [3 :1] et du méthyl eugénol+abamectine [35% :0,5%]. Pour ce faire, les mouches mâles ont été d'abord élevées au laboratoire. Elles ont été ensuite réparties dans 12 cages en raison de 100 individus par cage. Un dispositif comportant 3 traitements avec 4 répétitions a été mis place. Les traitements sont le témoin non traité, le méthyl eugénol+malathion et le méthyl eugénol+abamectine. Pour chaque type de formulation, 5ml ont été répartis dans 3 boîtes de Pétri et placés dans chaque cage. Des observations ont été réalisées au bout de 30 mn, 1h, 2h, 4h, 8h, 16h, 24h et 48h dans les cages témoins et celles traitées pour compter le nombre de mouches mortes. Le taux de mortalité était plus élevé dans les cages traitées au méthyl eugénol+malathion que dans celles traitées au méthyl eugénol+abamectine ; ceci à toutes les fréquences d'observation (10,75 à 100% contre 0,25 à 96%). L'effet du malathion était plus rapide que celui de l'abamectine sur les mouches. En effet, le malathion a causé 10,75% de mortalité contre 0,25% de mortalité causée par l'abamectine au bout de 30mn. De plus, 54,10% des mouches étaient mortes au bout de 16h dans les cages traitées au malathion. À la même période, l'abamectine a causé 8% de mortalité. La formulation méthyl eugénol+malathion peut être utilisée pour le piégeage de masse des mouches dans les vergers de manguiers.

Mots clés : *Bactrocera dorsalis*, malathion, abamectine.

6.09. Population Dynamics and Niche Partionning between Invasive Tephritids in Comoros

Nébié K**, I.[1, 2,3],** Raveloson-Ravaomanarivo, L.H.[3], Delatte, H.[1], Chiroleu, F.[1], Allibert, A.[1], Nouhou, S.[2], Quilici, S.[1], Duyck, P.F.[1]

[1]UMR « Peuplements Végétaux et Bio-agresseurs en Milieu Tropical », CIRAD Pôle de Protection des Plantes, 7 chemin de l'Irat, 97410 Saint Pierre, La Réunion, France

[2]Institut National de Recherche pour l'Agriculture, la Pêche et l'Environnement (INRAPE) Moroni Union des Comores, Mdé Ex-CEFADER, B.P : 289 Moroni

[3]Departement d'Entomologie, Faculté des Sciences, Université d'Antananarivo, B.P: 906 Antananarivo 101

Email : mze-hassani.issa@cirad.fr / mzehassani@yahoo.fr

Abstract

Ten Tephritid species of economic importance occur in the Comoros Union, including *Bactrocera dorsalis* (Hendel) that was first recorded in 2005. Comoros Union is composed of three volcanic islands (Grande Comore, Moheli and Anjouan) each with different topography and strong differences in climatic factors within and between islands. Up to now, little was known about the influence of these factors on fruit fly species composition, distribution and interactions on the archipelago. The main objectives of this study were to characterize the population dynamics of fruit flies in relation to seasonality and host fruit availability and the effect of temperature and rainfall on the distribution of fruit fly species. Field was carried in 11 sites across the three islands

within an altitudinal range of 55 to 855 meters above sea level for 2 years. Four different lures were used throughout the survey and fruit phenology was recorded weekly. The invasive species *B. dorsalis* was recorded as the most dominant species followed by *Ceratitis capitata* accounting for …% and …%, respectively. The population density of the different species was higher during the hot and rainy season than during the cold and dry season. Higher densities of *B. dorsalis* were observed on Grande Comore island compared to Moheli and Anjouan where the invasion is probably more recent. The abundance of *B. dorsalis* was significantly higher in guava and mango compared to the other host species. *Bactrocera dorsalis* was found to prefer hot and humid areas, while *C. capitata* preferred dry areas of medium altitude, suggesting niche climatic partitioning between the two species.

Key words: Comoros, invasive tephritids, population dynamics, *Bactrocera dorsalis, Ceratitis capitata*

SUB-THEME 7:

Biological Control

ST-7.01. Lure-and-Infect Strategy for Application of Entomopathogenic Fungus for the Control of Bean Flower Thrips in Cowpea

Mfuti DK[a, b], Niassy S[a], Subramanian S[a], du Plessis H[b], Ekesi S[a] and Maniania NK[a]

[a] International Centre of Insect Physiology and Ecology (icipe), PO Box 30772-00100, Nairobi, Kenya.

[b] Unit for Environmental Sciences and Management, North-West University, Private Bag X6001, Potchefstroom 2520, South Africa.

Correspondence email*: davinkupesa@gmail.com*

Abstract

The efficacy of spot spray and cover spray applications of *Metarhizium anisopliae* (Metsch.) Sorok. in combination with the thrips attractant Lurem-TR (methyl-isonicotinate) was compared in field experiments for the management of bean flower thrips (BFT) on a cowpea crop in two seasons. Treatments were applied five days after the placement of Lurem-TR in the field. During the first season, BFT densities were lower in spot spray (10.1±4.3 thrips) and cover spray (11.5±4.8 thrips) treatments than in the control treatment (41.8±15.2 thrips). In the second season, the spot spray recorded the lowest BFT density of 32.5±6.0 thrips, followed by cover spray with 40.9±7.0 thrips. The control treatment recorded the highest BFT density of 67.4±10.3 thrips. Fungal viability and thrips conidial acquisition did not differ between the two application methods. Both application strategies resulted in a yield increase of 34.1 and 46.2% compared to the control with the spot and cover spray treatments, respectively. The cost benefit analysis indicated more profits with the spot spray than cover spray application due to the reduction in labour and the quantity of inoculum used. Spot spray application of biopesticides could therefore be a more viable option for small-scale farmers for the management of BFT on cowpea.

Key words: Cost benefit; Lurem-TR; Lure and infect; *Metarhizium anisopliae, Megalurothrips sjostedti*

ST-7.02. Evaluation of Moringa (*Moringa oleifera* Lamp) Powders and Seed Aqueous Extract for the Control of Khapra Beetle (*Trogoderma granarium* Everts)

Ashwag A M[1], Seif Eldin M K* and Elhadi M I[2]

[1]Department of Plant Protection, Sudan University of Science and Technology, Khartoum, Sudan.

[2]Agricultural Bank of Sudan, Khartoum, Sudan.

Corresponding author email: ashwagsulim@yahoo.co.uk

Abstract

The study investigated the comparative efficacy of Moringa (*Moringa oleifera* Lamp) powders from different plant parts (leaf, flower, seed and branch) on the suppression of khapra beetle (*Trogoderma granarium* (Everts.) damage in sorghum grains. Three rates 1%, 2.5%, and 5% w/w of the plant powders were used under laboratory conditions. The experiment was laid out